IDAHO SPARK

Student Program for Aeronautics Resources for Knowledge

STATUS REPORT

Covering the Time Period June 15, 1995 - June 15, 1996

Idaho SPARK
College of Education, Room 506-F
University of Idaho
Moscow, Idaho 83844-3080

NASA Cooperative Agreement Number: NCC 2-914

Summary Information:
This status report reviews the work completed and in progress on Idaho SPARK: Student Program for Aeronautics Resources for Knowledge, between June 15, 1995 and June 15, 1996. All progress is reported by goal, objective and milestone as specified in the Idaho SPARK proposal dated February 10, 1995.

All milestones are on schedule or in progress. Four milestones have been completed ahead of schedule.

Efforts are now focused on the improvement and continual development of the SPARK homepage as well as successful student achievement within the Upward Bound summer program.

Personnel:
Kay Brothers, serves as director of Idaho SPARK on a full time basis (2,088 hours/year). Her duties include curriculum development, instruction, homepage development, network support and supervision.

Patricia Boyd, serves as fiscal officer of Idaho SPARK on a part-time basis (696 hours/year). Her duties include budget management, office administration and support.

All in-kind personnel matching continues to be on schedule.

Equipment:
All computer and connectivity equipment has been purchased for the project. Computer equipment was upgraded from Gateway P5-60 Personal Computers to Dell P75 Personal Computers due to availability and price.

Budget:

Category	Budgeted	Balance
Salary	$32,009	$ 1,226.36
Fringe	$ 9,648	($ 1,209.60)
Irregular Help	$ 6,570	$ 1,336.16
Travel	$ 180	($ 3,613.19)
Operating Expense	$ 7,159	($ 73.60)
Capital Outlay	$13,095	$ 91.50
Reserve	$ 0	$ 0
Overhead	$21,615	$ 590.87
Trustee Benefits	$ 0	($ 1,670.40)
Total	$90,276	$ 3,321.90

Salary and Irregular Help are budgeted through June 30, 1996. This report is as of June 15, 1996.
Fringe deficit due to underestimated calendar year rate increase. Total hours worked will remain the same. Total (fringe and hourly rate) Salary expenditure will remain as budgeted.

Irregular Help balance due to pay period lag of two weeks within the University of Idaho system.

Travel deficit due to travel to the PI meeting in March. This travel was budgeted for Year Two (June 15, 1996 - June 15, 1997). Travel occurred within Year One expenditures. Travel expenditures remain within total Year One and Year Two requests.

Overhead deficit is in accordance with Travel and Trustee Benefit payment deficit. Anticipated total Year One and Year Two Overhead expenditures will be less than originally budgeted.

Trustee Benefit deficit is due to use of an unanticipated category. Because so many of the teachers commuted during the workshop (thus saving housing expenses) we paid for the course credits. University of Idaho credit fee was set at the state teacher In-Service rate of $28.80 graduate credit and $57.50 undergraduate rate. The total expenditure for the workshop will remain within the budgeted amount.

A complete Budget report is located in appendix G.

Milestone Completion and Status by Goal and Objective

A complete copy of the original Cooperative Agreement Payment Schedule can be found in Appendix A.

Goal 1 - Completed

To make effective use of the excitement of technology and NASA's broad mission to increase awareness, interest, and general knowledge of aeronautics grades 9-12.

Objective: A - Completed

To gather and distribute a comprehensive array of NASA educational materials, specifically aeronautics- related materials.

Milestone	Status
Develop an accepted set of standards for material review based on accepted measures of quality. (July, 1995).	Completed, Appendix C
Review NASA Teacher Resource Network materials, and aeronautic education materials from: Ames Research Center, Dryden Flight Center, Langley Research Center, and Lewis Research Center. (June - August, 1995).	Completed
Select applicable materials for school site distribution. (September, 1995).	Completed

Objective: B - Completed

To demonstrate a wide variety of technological equipment and electronic information resources in order to introduce Native American, disadvantaged, and rural youth to aeronautic careers and opportunities.

Milestone	Status
Develop an accepted set of standards for technology equipment and information resources review based on accepted measures of quality. (July, 1995).	Completed, Appendix D
Review most recent developments in technology equipment and information as well as existing school-district-owned equipment and match acceptable selections with initial budget request and specifications. (July - September, 1995).	Completed
Visit site schools and demonstrate selected aeronautic materials and technology equipment and information resources. (October, 1995 - December, 1995).	Completed

Goal 2 - In Progress
To create an increased information and support mechanism for students and faculty as they expand their interests in aeronautic studies.

Objective: A - In Progress
To train 30 high school students and 25 teachers in aeronautic content, information system use (Internet), computer modeling, and human factors of aerial vehicles design and operation.

Milestone	Status
Integrate aeronautic content, information system use (Internet), computer modeling, and human factors of aerial vehicles design and operation into existing University of Idaho Upward Bound's curriculum theme of space. (May, 1996).	Completed
Perform formative and summative integration evaluation of content, instruction, practice, and relevance. (June, 1996)	Completed
Execute six week University of Idaho Upward Bound modified curriculum. (June - August, 1996, 1997 & 1998).	In Progress
Perform formative evaluation of content, instruction, practice, and relevance. (June - August, 1996, 1997).	In Progress
Perform summative evaluation of content, instruction, practice, and relevance. (June -August, 1996 & 1997; December, 1996 & 1997).	In Progress
Execute two-week teacher workshop in aeronautic content, information system use (Internet), computer modeling, and human factors of aerial vehicles design and operation. (June - August, 1996).	Completed
Perform formative evaluation of content, instruction, practice, and relevance. (June - August, 1996).	Completed
Perform summative evaluation of content, instruction, practice, and relevance. October, 1996).	Pending

Objective: B - Completed

Setup local area access server.

Milestone	Status
Develop an accepted set of standards for home page information. (February, 1996).	Completed
Create a home page. (February, 1996).	Completed & In Progress
Perform formative evaluation for the items (March, 1996).	Completed

Objective: C - In Progress

Match business persons and scientists with site schools.

Milestone	Status
Obtain design and inquiry challenges from business and scientists. (June, 1996; February, 1997; June, 1997; February, 1998; June, 1998).	In Progress
Obtain site school and student objectives and measurements of successful attainment. (June, 1996; February, 1997; June, 1997; February, 1998; June, 1998).	In Progress
Set design and inquiry requirements for each site location. (June, 1996; February, 1997; June, 1997; February, 1998; June, 1998).	In Progress
Execute design and inquiry challenges in SPARK schools. (September, 1996 - June, 1997; September, 1997 - June, 1998).	Pending
Perform formative and summative evaluation on design and inquiry challenges. (September, 1996 - June, 1997; September, 1997 - June, 1998).	Pending

Objective: D - In Progress

Develop a speaker's bureau on the home page called "Aeronautic Net Speakers".

Milestone	Status
Attain prospective Aeronautic Net Speakers. (June - September, 1995).	Completed & In Progress, Appendix E
Develop home page item featuring Aeronautic Net Speakers by field of study, location, and job description. (January, 1996).	Completed & In Progress

Goal 3 - In Progress

To create a link between rural and Native American populations, and urban communities.

Objective: A - In Progress

To create a sense of the larger world for students and teachers.

Milestone	Status
Conduct Internet server and node session. (July, 1996, 1997 & 1998).	Completed & In Progress
Evaluate Internet session. (July, 1996, 1997, & 1998).	Completed & In Progress
Match students and teachers with urban counterparts. These counterparts will to be chosen from either a sister CAN awardee or Western Regional Space Grant College and Fellowship Consortia members. (August, 1996, 1997, &1998).	Pending
Conduct three-day field study of Boeing Museum of Air and Flight, Seattle Washington. This activity to be done with Upward Bound, Vocational Education, Mathematics and Science teachers, and the Vocational College teachers. (Spring 1997)	Pending
Perform daily formative evaluation of logistics and objectives.	Pending
Perform summative evaluation of preparation, value, and relevance. (May, 1997, & 1998).	Pending

Objective: B - Pending

To apply telecomputing to meet a cultural and geographic need.

Milestone	Status
Conduct three-day apprenticeship training visitation carried out by the Upward Bound, Vocational Education, and Mathematics and Science teachers to be held at research facilities or business sites (Idaho National Engineering Laboratory, Boeing, C & S Tek, First Step Computers, MRC, Idaho Transportation Department -Division of Aeronautics). (June - August 1997).	Pending
Perform summative evaluation of training visitation. (September, 1997).	Pending
Conduct week-long site visit and four-week completion Apprenticeship for Upward Bound students. (June - August, 1997, & 1998).	Pending
Perform daily formative and summative evaluation of telecomputing apprenticeship program of content, instruction, support, practice, communication, and relevance. (June - August, 1997 & July, 1998).	Pending

A complete copy of Summary of Milestones, Completion Dates and Payment Milestones can be found in Appendix B.

Summary of Milestones, Completion Dates and Payment Milestones

Milestone(completion date)	Dec. 29 1995	Mar. 29 1996	Sept. 30 1996	Mar. 31 1997	Sept. 30 1997	Mar. 31 1998	June 30 1998
Develop standards for material and information resource quality review. (July, 1995)	13,186						
Review NASA Teacher Resource Network materials, and aeronautic education materials. (July, 1995)	13,186						
Select appropriate materials for SPARK schools. (September, 1995)	5000						
Visit and demonstrate selected aeronautic materials and information resources. (December, 1995)	13,186						
Obtain prospective "Aeronautic Net" speakers. (September, 1995)	1,000						
Develop a home page based on standards consistent with national and state curriculum practices. (August, 1995)	13,186						
Perform formative evaluation of items, style, and appeal. (March, 1996)		5,000					
Develop home page item featuring "Aeronautic Net Speakers". (January, 1996)		5,225					
Perform formative and summative evaluation; integrate evaluation. (June 1996)			3,000				
Integrate aeronautic content, information system use (Internet), computer modeling, and human factors into existing University of Idaho Upward Bound curriculum theme of space. (March, 1996)		37,745					
Conduct six week University of Idaho Upward Bound modified curriculum. (August, 1996 &1997)			17,319		17,319		
Perform formative and summative evaluation of content, instruction, practice, and relevance of curriculum. (June - August, 1996 & 1997; December, 1996 & 1997)				5,000		1,550	
Conduct two week teacher workshop in aeronautic content, information system use (Internet), computer modeling, and human factors. (August, 1996)			14,926				
Perform formative and summative evaluation of content, instruction, practice, and relevance of workshop. (June - August, 1996 ; December, 1996)				5,000		1,550	
Conduct Internet server and node site session. (June, 1996, 1997, & 1998)			2,000		1,550		1,550
Evaluate Internet server and node session. (July, 1996, 1997, & 1998)			5,000		2,000		2,000

Shading = completed

Milestone(completion date)	Dec. 29 1995	Mar. 29 1996	Sept. 30 1996	Mar. 31 1997	Sept. 30 1997	Mar. 31 1998	June 30 1998
Conduct three day field trip study of Boeing Museum of Air and Flight, Seattle Washington. (May, 1997 & 1998)			14,926		14,926		
Perform daily formative and final summative evaluations of logistics and objectives, preparation, value and relevance of field trip. (May, 1997 & 1998)					500		500
Match students and teachers with urban counterparts. (July, 1996, 1997, & June, 1998)			7,463		1,550		1,550
Obtain student objectives and measurements of success. (June, 1996; February, 1997; June, 1997; February, 1998, & June, 1998)			7,463	7,463	2,080	2,080	2,080
Obtain design and inquiry challenges. (June, 1996; February, 1997; June, 1997; February, 1998, & June, 1998)			7,463		1,550	1,550	1,550
Set design and inquiry requirements. (June, 1996; February, 1997; June, 1997; February, 1998, & June, 1998)			7,463	7,463	1,550	1,550	1,550
Evaluate (formative and summative) design and inquiry challenges. (September, 1996-June, 1997; September, 1997-June, 1998)					1,550		1,550
Conduct three day apprenticeship training Upward Bound, Vocational Education, site school teachers. (July, 1997)					9,430		
Perform summative evaluation of training session. (September, 1997)					500		
Execute one week apprentice site requirement four week home completion by Upward Bound students. (August, 1997 & June, 1998)					2,000		2,000
Perform daily formative and summative evaluation of telecomputing apprenticeship program for content, instruction, support, practice, communication and relevance. (August, 1997 & June 1998)					2,000		2,000
Payment Milestone Totals	**58,745**	**47,970**	**87,023**	**24,926**	**58,505**	**8,280**	**16,330**

Shading = completed

Project Research and Evaluation

Appropriate and timely progress has been made toward completing the strategic assessment and evaluation plan. The evaluation procedure and design has been reviewed by The Northwest Regional Educational Laboratory (NWREL). Additionally, all instruments have been by the reviewed by NWREL. All instruments have been pilot tested. Results from pilot testing have been incorporated into the existing instrument design.

The strategic assessment and evaluation plan consists of six components designed to determine overall attainment of project objectives: (a) key personnel formative and summative evaluation of project materials and methods, (b) participants' evaluation of project components, (c) summative evaluation of participants' knowledge and attitudes toward aeronautics and information resources, (d) impact of project on science and mathematics students' acquisition of knowledge, skills, processes, and relationships, (e) key personnel's' overall summative evaluation of project impact in light of all measures and evaluative reports, and (f) external evaluation. Each of these is described below.

(a) Evaluation of Project Materials and Methods. The project objectives are compiled into a detailed chronological listing of activities, outcomes or products, beginning and completion dates, and persons assigned responsibility. These activities are reviewed at least monthly by senior project personnel for qualitative analysis and timely completion. Specific activities then will be modified in light of the results (formative), or the results will be reported (summative). Completed on a payment milestone basis.

(b) Participant Evaluation of Project. Participants' evaluation of project components will include several parts.

Task	Status
Participating teachers will complete an assessment of the program instructional materials and methods	Completed & in Progress
Participating teachers will complete an assessment of the quality, relevance, and usefulness of instruction.	Completed & in Progress
Participating teachers will assess the extent to which the project components impacted project goal and objective implementation	Completed & in Progress
Objective items, I Likert Rating Scale items, and open-ended questions will be used to collect data.	Pending
Senior personnel will then compile and analyze data to determine the significance of the data; reports will be prepared that describe participants' perceptions of the projects' impact and effectiveness.	In Progress

(c) Formative and Summative Evaluation of Teacher and Staff Participants.

Task	Status
The objective measure will be developed by the project personnel	Completed, Appendix E
Participants' knowledge and attitude toward aeronautics and information resources will be measured via ongoing and final objective assessment knowledge and rating scales attitude	Pending
Science Teaching Self-Efficacy Beliefs Inventory to measure attitude development (general attitude and self-efficacy).	Pending
The data for these measures will be subjected to a variety of inferential statistics tests to determine the level(s) of significance of the data. These tests include t-tests, Wilcoxon matched-pairs signed rank tests, and Chi-squared tests of significance.	Pending

(d) Impact on Upward Bound Science and Mathematics Students. Pending

(e) Overall Project Evaluation. The personnel will collect all data and evaluative reports from the above components and prepare midterm and annual reports indicating levels of success and areas of concern in need of revision. Completed & In Progress

(f) Outside Evaluation Component. An external evaluation will be conducted by the Northwest Regional Educational Laboratory. Completed & In Progress

Dissemination of Project Information

A key component of the Idaho SPARK program is dissemination of project information. Many efforts have been made to increase the visibility of Idaho SPARK and NASA specifically. An essential enabling component has been the support and networking of the National Space Grant College and Fellowship Program and the Idaho Space Grant Consortium. The highlights of the SPARK dissemination include:

- eight local, state, and national, presentations by project personnel;
- nine local, state, and national newsletter articles;
- one local newspaper release;
- one State Department of Education print release;
- one national poster display presentation;
- one presidential briefing presentation;
- one nationally distributed CD-ROM of exceptional science and mathematics programs for teachers (release date September, 1996).

Appendix A

Cooperative Agreement Payment Schedule
Section 10.0

Dated February 10, 1995
NCC 2-914

10.0 - Cooperative Agreement Payment Schedule

Goal 1
To make effective use of the excitement of technology and NASA's broad mission to increase awareness, interest, and general knowledge of aeronautics grades 9-12.

Objective: A
To gather and distribute a comprehensive array of NASA educational materials, specifically aeronautics- related materials.

Milestones:
- Develop an accepted set of standards for material review based on accepted measures of quality. (July, 1995).
- Review NASA Teacher Resource Network materials, and aeronautic education materials from: Ames Research Center, Dryden Flight Center, Langley Research Center, and Lewis Research Center. (June - August, 1995).
- Select applicable materials for school site distribution. (September, 1995).

Objective: B
To demonstrate a wide variety of technological equipment and electronic information resources in order to introduce Native American, disadvantaged, and rural youth to aeronautic careers and opportunities.

Milestones:
- Develop an accepted set of standards for technology equipment and information resources review based on accepted measures of quality. (July, 1995).
- Review most recent developments in technology equipment and information as well as existing school-district-owned equipment and match acceptable selections with initial budget request and specifications. (July - September, 1995).
- Visit site schools and demonstrate selected aeronautic materials and technology equipment and information resources. (October, 1995 - December, 1995).

Goal 2
To create an increased information and support mechanism for students and faculty as they expand their interests in aeronautic studies.

Objective: A
To train 30 high school students and 25 teachers in aeronautic content, information system use (Internet), computer modeling, and human factors of aerial vehicles design and operation.

Milestones:

♦ Integrate aeronautic content, information system use (Internet), computer modeling, and human factors of aerial vehicles design and operation into existing University of Idaho Upward Bound's curriculum theme of space. (May, 1996).

♦ Perform formative and summative integration evaluation of content, instruction, practice, and relevance. (June, 1996)

♦ Execute six week University of Idaho Upward Bound modified curriculum. (June - August, 1996, 1997 & 1998).

♦ Perform formative evaluation of content, instruction, practice, and relevance. (June - August, 1996, 1997).

♦ Perform summative evaluation of content, instruction, practice, and relevance. (June - August, 1996 & 1997; December, 1996 & 1997).

♦ Execute two-week teacher workshop in aeronautic content, information system use (Internet), computer modeling, and human factors of aerial vehicles design and operation. (June - August, 1996).

♦ Perform formative evaluation of content, instruction, practice, and relevance. (June - August, 1996).

♦ Perform summative evaluation of content, instruction, practice, and relevance. October, 1996).

Objective: B

Setup local area access server.

Milestones:

♦ Develop an accepted set of standards for home page information based on accepted measures of quality and develop site school objectives to be consistent with National and State curriculum practices. (February, 1996).

♦ Create a home page. (February, 1996).

♦ Perform formative evaluation for the items to be included and their style and appeal. (March, 1996).

Objective: C

Match business persons and scientists with site schools.

Milestones:

♦ Obtain design and inquiry challenges from business and scientists. (June, 1996; February, 1997; June, 1997; February, 1998; June, 1998).

♦ Obtain site school and student objectives and measurements of successful attainment. (June, 1996; February, 1997; June, 1997; February, 1998; June, 1998).

♦ Set design and inquiry requirements for each site location. (June, 1996; February, 1997; June, 1997; February, 1998; June, 1998).

♦ Execute design and inquiry challenges in SPARK schools. (September, 1996 - June, 1997; September, 1997 - June, 1998).

♦ Perform formative and summative evaluation on design and inquiry challenges. (September, 1996 - June, 1997; September, 1997 - June, 1998).

Objective: D
Develop a speaker's bureau on the home page called "Aeronautic Net Speakers".

Milestones:
♦ Attain prospective Aeronautic Net Speakers. (June - September, 1995).
♦ Develop home page item featuring Aeronautic Net Speakers by field of study, location, and job description. (January, 1996).

Goal 3
To create a link between rural and Native American populations, and urban communities.

Objective: A
To create a sense of the larger world for students and teachers.

Milestones:
♦ Conduct Internet server and node session. (July, 1996, 1997 & 1998).
♦ Evaluate Internet session. (July, 1996, 1997, & 1998).
♦ Match students and teachers with urban counterparts. These counterparts will to be chosen from either a sister CAN awardee or Western Regional Space Grant College and Fellowship Consortia members. (August, 1996, 1997, &1998).
♦ Conduct three-day field study of Boeing Museum of Air and Flight, Seattle Washington. This activity to be done with Upward Bound, Vocational Education, Mathematics and Science teachers, and the Vocational College teachers. (Spring 1997).
♦ Perform daily formative evaluation of logistics and objectives.
♦ Perform summative evaluation of preparation, value, and relevance. (May, 1997, & 1998).

Objective: B
To apply telecomputing to meet a cultural and geographic need.

Milestones:
♦ Conduct three-day apprenticeship training visitation carried out by the Upward Bound, Vocational Education, and Mathematics and Science teachers to be held at research facilities or business sites (Idaho National Engineering Laboratory, Boeing, C & S Tek, First Step Computers, MRC, Idaho Transportation Department -Division of Aeronautics). (June - August 1997).
♦ Perform summative evaluation of training visitation. (September, 1997).
♦ Conduct week-long site visit and four-week completion Apprenticeship for Upward Bound students. (June - August, 1997, & 1998).
♦ Perform daily formative and summative evaluation of telecomputing apprenticeship program of content, instruction, support, practice, communication, and relevance. (June - August, 1997 & July, 1998).

Appendix B

Summary of Milestones, Completion Dates and Payment Milestones
Section 9.7

Dated February 10, 1995
NCC 2-914

Summary of Milestones, Completion Dates and Payment Milestones

Milestone(completion date)	Dec. 29 1995	Mar. 29 1996	Sept. 30 1996	Mar. 31 1997	Sept. 30 1997	Mar. 31 1998	June 30 1998
Develop standards for material and information resource quality review. (July, 1995)	13,186						
Review NASA Teacher Resource Network materials, and aeronautic education materials. (July, 1995)	13,186						
Select appropriate materials for SPARK schools. (September, 1995)	5000						
Visit and demonstrate selected aeronautic materials and information resources. (December, 1995)	13,186						
Obtain prospective "Aeronautic Net" speakers. (September, 1995)	1,000						
Develop a home page based on standards consistent with national and state curriculum practices. (August, 1995)	13,186						
Perform formative evaluation of items, style, and appeal. (March, 1996)		5,000					
Develop home page item featuring "Aeronautic Net Speakers". (January, 1996)		5,225					
Perform formative and summative evaluation; integrate evaluation. (June 1996)			3,000				
Integrate aeronautic content, information system use (Internet), computer modeling, and human factors into existing University of Idaho Upward Bound curriculum theme of space. (March, 1996)		37,745					
Conduct six week University of Idaho Upward Bound modified curriculum. (August, 1996 &1997)			17,319		17,319		
Perform formative and summative evaluation of content, instruction, practice, and relevance of curriculum. (June - August, 1996 & 1997; December, 1996 & 1997)				5,000		1,550	
Conduct two week teacher workshop in aeronautic content, information system use (Internet), computer modeling, and human factors. (August, 1996)			14,926				
Perform formative and summative evaluation of content, instruction, practice, and relevance of workshop. (June - August, 1996 ; December, 1996)				5,000		1,550	
Conduct Internet server and node site session. (June, 1996, 1997, & 1998)			2,000		1,550		1,550
Evaluate Internet server and node session. (July, 1996, 1997, & 1998)			5,000		2,000		2,000

Milestone(completion date)	Dec. 29 1995	Mar. 29 1996	Sept. 30 1996	Mar. 31 1997	Sept. 30 1997	Mar. 31 1998	June 30 1998
Conduct three day field trip study of Boeing Museum of Air and Flight, Seattle Washington. (May, 1997 & 1998)			14,926		14,926		
Perform daily formative and final summative evaluations of logistics and objectives, preparation, value and relevance of field trip. (May, 1997 & 1998)					500		500
Match students and teachers with urban counterparts. (July, 1996, 1997, & June, 1998)			7,463		1,550		1,550
Obtain student objectives and measurements of success. (June, 1996; February, 1997; June, 1997; February, 1998, & June, 1998)			7,463	7,463	2,080	2,080	2,080
Obtain design and inquiry challenges. (June, 1996; February, 1997; June, 1997; February, 1998, & June, 1998)			7,463		1,550	1,550	1,550
Set design and inquiry requirements. (June, 1996; February, 1997; June, 1997; February, 1998, & June, 1998)			7,463	7,463	1,550	1,550	1,550
Evaluate (formative and summative) design and inquiry challenges. (September, 1996-June, 1997; September, 1997-June, 1998)					1,550		1,550
Conduct three day apprenticeship training Upward Bound, Vocational Education, site school teachers. (July, 1997)					9,430		
Perform summative evaluation of training session. (September, 1997)					500		
Execute one week apprentice site requirement four week home completion by Upward Bound students. (August, 1997 & June, 1998)					2,000		2,000
Perform daily formative and summative evaluation of telecomputing apprenticeship program for content, instruction, support, practice, communication and relevance. (August, 1997 & June 1998)					2,000		2,000
Payment Milestone Totals	**58,745**	**47,970**	**87,023**	**24,926**	**58,505**	**8,280**	**16,330**

Appendix C

Standards for Material Review and Selection

NCC 2-914

Idaho SPARK
Materials Selection Measure

Title of Piece: _____
Author: _____
Publisher: _____
Year: _____
Location: _____

Key: 1 - Unsatisfactory
2 - Poor
3 - Satisfactory
4 - Good
5 - Excellent

Overall Rating _____
Use recommendation:
_____

Criteria						
1	**Content**					
1.1	Content up to date.	**1**	**2**	**3**	**4**	**5**
1.2	Content scientifically accurate.	**1**	**2**	**3**	**4**	**5**
1.3	Content appropriate for grade level of students.	**1**	**2**	**3**	**4**	**5**
1.4	Content reflects scientific enterprise.	**1**	**2**	**3**	**4**	**5**
1.5	Content includes historical background and development of concepts and principles.	**1**	**2**	**3**	**4**	**5**
1.6	Content stresses the interaction of science, society, and technology.	**1**	**2**	**3**	**4**	**5**
1.7	Content is relevant to students.	**1**	**2**	**3**	**4**	**5**
1.8	Objectives are clearly stated.	**1**	**2**	**3**	**4**	**5**
	Partial score_____					
2	**Organization**					
2.1	Organization is flexible, permitting variation in sequence.	**1**	**2**	**3**	**4**	**5**
2.2	Material within chapters is well organized.	**1**	**2**	**3**	**4**	**5**
	Partial score_____					
3	**Reading level**					
3.1	Reading level is appropriate for grade level of students.	**1**	**2**	**3**	**4**	**5**
3.2	Technical words kept to a minimum.	**1**	**2**	**3**	**4**	**5**
3.3	Technical language is appropriate for grade level.	**1**	**2**	**3**	**4**	**5**
3.4	Technical words are clearly explained when used.	**1**	**2**	**3**	**4**	**5**
	Partial score_____					
4	**Instructional approach**					
4.1	Approach stresses science as inquiry.	**1**	**2**	**3**	**4**	**5**
4.2	Approach is suitable to a wide range of student abilities.	**1**	**2**	**3**	**4**	**5**
	Partial score_____					
5	**Illustrations**					
5.1	Illustrations are up to date.	**1**	**2**	**3**	**4**	**5**
5.2	Photographs are clear and of good quality.	**1**	**2**	**3**	**4**	**5**
5.3	Line drawings are well done.	**1**	**2**	**3**	**4**	**5**
5.4	Captions for illustrations are well written and appropriate.	**1**	**2**	**3**	**4**	**5**
5.5	Illustrations are useful in teaching.	**1**	**2**	**3**	**4**	**5**
	Partial score_____					

Key: 1 - Unsatisfactory
2 - Poor
3 - Satisfactory
4 - Good
5 - Excellent

Criteria						
6	**Activities**					
6.1	Activities are suitable for the cognitive capabilities of students.	**1**	**2**	**3**	**4**	**5**
6.2	Activities involve skills that are within the manipulative capabilities of students.	**1**	**2**	**3**	**4**	**5**
6.3	Activities stress investigation.	**1**	**2**	**3**	**4**	**5**
6.4	Activities are safe for students to perform.	**1**	**2**	**3**	**4**	**5**
6.5	Facilities ,equipment and apparatus needed are available for student use.	**1**	**2**	**3**	**4**	**5**
6.6	Activities are relevant to content presented.	**1**	**2**	**3**	**4**	**5**
6.7	Activities can be conducted during one class period.	**1**	**2**	**3**	**4**	**5**
	Partial score_____					
7	**Teacher aids**					
7.1	Teacher's guide is available for text and is useful.	**1**	**2**	**3**	**4**	**5**
7.2	Annotated edition is available for text and is useful.	**1**	**2**	**3**	**4**	**5**
7.3	Tests are provided.	**1**	**2**	**3**	**4**	**5**
7.4	Equipment and supply lists are available for activities.	**1**	**2**	**3**	**4**	**5**
7.5	Student workbook is available.	**1**	**2**	**3**	**4**	**5**
7.6	Resource materials are suggested.	**1**	**2**	**3**	**4**	**5**
	Partial score_____					
8	**Indexes and Glossaries**					
8.1	Glossary is accurate and complete.	**1**	**2**	**3**	**4**	**5**
8.2	Index is accurate and complete.	**1**	**2**	**3**	**4**	**5**
	Partial score_____					

Appendix D

Information/Software Evaluation Criteria

NCC 2-914

SPARK
Information/Software Evaluation Criteria

Title:							
Producer/location							
Subject/Topics							
Grade levels	6	7	8	9	10	11	12
Required hardware							
Available for Hard Disk	yes				no		
Medium of Transfer	3.5 floppy			5.25 floppy		CD- ROM	
Required Software							
Software Protected	yes				no		
Back Up Policy							
Preview Policy							
Producer's field test data is available	on request			with package		not available	

Instructional Purposes & Techniques (circle all that apply)

remediation
drill
standard instruction
tutorial
enrichment
information retrieval
assessment
game
management
simulation
authoring
problem solving

Support Material Available (circle all that apply)

objectives
teacher's guide
prerequisite skills or activities
resource/reference information
sample program output
student instructions
program operating instructions
student worksheet
pre-test
text book correlation
post-test
follow-up activities

Quality

Write a number from 1 (Low) to 5 (High) which represents your judgment of the quality.

_____ Content
_____ Method
_____ Technical

Recommendations

I highly recommend this package.
I would use or recommend use of this package with little or no change.
I would use or recommend use of this package only if certain changes were made.
I would not use or recommend this package.

Potential use and settings:

Key: SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree; NA = Not Applicable

A.	**Content**	**SA**	**A**	**D**	**SD**	**NA**
1	Content is accurate.	SA	A	D	SD	NA
2	Content has educational value.	SA	A	D	SD	NA
3	Content is free of race, ethnic, sex and other stereotypes.	SA	A	D	SD	NA
B	**Method**	**SA**	**A**	**D**	**SD**	**NA**
4	Purpose is well defined.	SA	A	D	SD	NA
5	Achieves stated purpose.	SA	A	D	SD	NA
6	Presentation is clear and logical.	SA	A	D	SD	NA
7	Level of difficulty is appropriate.	SA	A	D	SD	NA
8	Graphics/color/sound are used for appropriate reasons.	SA	A	D	SD	NA
9	Is motivational.	SA	A	D	SD	NA
10	Stimulates creativity.	SA	A	D	SD	NA
11	Feedback is effectively employed.	SA	A	D	SD	NA
12	Learner controls rate and sequence of presentation and review.	SA	A	D	SD	NA
13	Instruction is meaningful to students	SA	A	D	SD	NA
14	Learning can be generalized to other situations.	SA	A	D	SD	NA
C	**Technical Characteristics**					
15	Support materials are comprehensive.	SA	A	D	SD	NA
16	Support materials are effective.	SA	A	D	SD	NA
17	Displays are effective.	SA	A	D	SD	NA
18	Easily operated independently.	SA	A	D	SD	NA
19	Easily employed by teachers.	SA	A	D	SD	NA
20	Program is reliable.	SA	A	D	SD	NA

A:SPARK\sofcri.doc

Appendix E

Aeronautic Net Initial Request Form

NCC 2-914

Aeronautic Net
Initial Information Request

Name:_____

Current employer:_____

Current phone number:_____

Email address:_____

Information to be featured on Aeronautic Net:

Name
Employers
Schooling
Personalized image, video clip
Career tips
Anecdote of scholastic struggle and /or success.

Optional:

1) **Email address or other means of correspondence**

2) **Design Challenges - Examples of current or previous work related challenges:**
   - Strengthen the structure while decreasing overall weight
   - Lengthen flight duration
   - Decrease cabin noise
   - Shorten runway length
   - Creation or redundant processes
   - Long duration flight comfort
   - Ease of passenger service
   - Maintenance documentation
   - Range of movement and instrument control
   - Mental taxation

Please Respond To :

Kay Brothers
Idaho SPARK
College of Education
Moscow, Idaho 83844-3080
Phone: (208) 885-4028
Fax: (208) 885-7607
Email: brothers@uidaho.edu

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Appendix F

Objective Measures Developed by Project Personnel

NCC 2-914

GUIDELINES FOR SUBMITTING THE PARENT OR GUARDIAN CONSENT FORM

- Submit one PARENT OR GUARDIAN CONSENT FORM to all Idaho SPARK: Student Program for Aeronautics Resources for Knowledge student participants.
- Ask students to have their parent or guardian sign and return the consent form.
- Explain that the consent form requests parent or guardian's permission to have students participate in the data collection process of the SPARK project. The data collection process may involve videotaping of classes, collecting student work, interviewing students on their progress using the lessons, and administering questionnaires. Clarify that all students will participate in SPARK as part of their course load, but participation in the data collection process is optional.
- Remind students that participation in the data collection process of the SPARK project will not affect their grades.
- Remind students that confidentiality will be assured as they will use a code identification number on all forms.
- Once all SPARK student participants have returned their completed consent forms mail them to:

Kay Brothers
College of Education, Room 506-F
University of Idaho
Moscow, Idaho 83844-3080

- If you have any questions about this consent form or how to submit it, contact Kay Brothers at (208) 885-4028 or brothers@uidaho.edu

PARENT OR GUARDIAN CONSENT FORM

Together with students from selected schools in Idaho your son or daughter has the opportunity to participate in Idaho SPARK. SPARK is part of NASA's effort to increase aeronautics awareness and Internet knowledge. Using computer
on-line lessons, students will learn physical science and mathematics while studying aeronautics, and participate as scientists in solving real world design challenges.

Occasionally we may wish to observe or videotape classes, collect student work, interview students on their progress using the lessons, and administer questionnaires. We are requesting your permission to have your son or daughter participate in these activities. Participation in these activities will not affect their grades. The information collected will be used to improve math, science and technology education. This information may be presented at educational or scientific conferences, or it may be included in research articles and formal reports. Student confidentiality will be assured as students will use a code identification number on all forms. Students' names will not be included in any journal article or formal report. You may withdraw your consent to having your son or daughter participate in these activities at any time and this decision will not affect their grades.

Please sign and return this form if you wish to give permission to your son or daughter to participate in the data collection activities of Idaho SPARK. Feel free to contact Isabel Bond, Principal Investigator, at (208) 885-6205 if you have any questions or concerns about this consent form or the Idaho SPARK project.

I hereby authorize_____
(son or daughter's full name)
to participate in the data collection activities of the Idaho SPARK project.

Parent or Guardian Signature_____

Address_____ _____

_____

Telephone Number_____

NOTE: (Later may change so that data is collected from all but use in analysis by those consenting)

c:\spark\forms\consent

GUIDELINES FOR COMPLETING THE END OF MODULE TEACHER QUESTIONNAIRE

- Complete the END OF MODULE TEACHER QUESTIONNAIRE each time you use a different Idaho SPARK module. Complete this questionnaire after students have completed the module.
- Provide as many comments as possible. Your responses are very important as they will be used in improving the modules.
- Once you have completed this questionnaire mail it to:

Kay Brothers
Idaho SPARK
College of Education, Room 506-F
University of Idaho
Moscow, Idaho 83844-3080

- If you have any questions about this questionnaire contact Kay Brothers at (208) 885-4028 or at brothers@uidaho.edu
- Thank you for participating in the Idaho SPARK project and for carefully completing this questionnaire.

c:\spark\forms\tchrqst

END OF MODULE TEACHER QUESTIONNAIRE

Teacher:_____Module Used:_____

Science Course in Which Module Was Used:_____Number of Days Module Was Used:___

Answer questions 1-18. Include as many comments as necessary to clarify your point of view. Your responses are very important as they will be used in improving the modules.

1. How did you implement the module?

_____(A) Integrated into your regular course

_____(B) Used as a stand-alone activity

_____(C) A focus of individual student projects

_____(D) An after-school activity

_____(E) An extra credit activity

Was the implementation successful?

____(A) Yes ____(B) Partially ____(C) No

Comments:_____

_____

_____

2. How did students participate in this module?

_____(A) Heterogeneous groups - 3 or more

_____(B) Homogeneous groups - 3 or more

_____(C) Pairs

_____(D) Individuals

3. How were students assigned to groups?

_____(A) All/ most teacher assigned

_____(B) About equal mix - Teacher assigned/ student chosen

_____(C) All/ most student chosen

Will students remain in these groups for the remainder of the semester? ___(A) yes ___(B) no

Comments:_____

_____

_____

_____

4. How were students assigned roles in the group?_____

_____

Will students remain with these roles for the remainder of the semester?_____

What would you do differently next time?_____

_____

_____

5. Was collaborative work successful in you classroom? Explain._____

_____

_____

What would you do differently next time?_____

_____

_____

6. What resources (other than Internet) did you provide students to work with on the module?

_____book

_____consumables - tape, paper, glue, tagboard

_____games

_____magazines

_____news articles

_____people

_____slides

_____textbooks

_____video

_____word processor

What additional resources would you provide next time?_____

_____

_____

7. Was the module appropriate for your students?

_____(A) yes _____(B) no

Comment:_____

_____

_____

8. Comment on the technical difficulties experienced when using the module. Technical difficulties may include problems with Netscape, NIH image, Internet, etc._____

_____

_____

9. Comment on the interface difficulties experienced when using the module or the SPARK home page. Interface refers to the look and feel, including the ways in which the user interacts with the tools and resources._____

_____

_____

10. Which portions of your existing curriculum were included in the module? That is, does it cover information, concepts, and skills required in your existing curriculum? Explain.

_____(A)	_____(B)	_____(C)	_____(D)
information	concepts	skills	processes

_____

_____

How can we modify the module to better fit the information, concepts, and skills required in your existing curriculum?_____

_____

11. Describe the students that were most engaged by this module._____

_____

_____

Describe the students that were least engaged by this module._____

_____

_____

Describe the students who learned the most through this module._____

_____

_____

Describe the students who learned the least through this module. _____

_____

_____

12. If you were designing this module, what would you do to improve it for students?_____

_____

_____

13. What can we do during the summer workshop to better prepare you to teach the SPARK modules and use problem-based-learning approaches?_____

_____

_____

14. What modifications can we do to the on-line teacher notes to better prepare you teach the Idaho SPARK modules?_____

_____

_____

15. Other comments about the Idaho SPARK project._____

_____

_____

Note: May try to format in such a way that student, module, on-line portions are grouped together

Still missing a feel (description) for how the students did the learning - interviews, as the lesson discussed only, adapted

c:\spark\forms\tchrqst

GUIDELINES FOR ADMINISTERING THE END OF MODULE STUDENT QUESTIONNAIRE

GENERAL GUIDELINES FOR ADMINISTERING THE QUESTIONNAIRE

- Administer the END OF MODULE STUDENT QUESTIONNAIRE each time students use a different Idaho SPARK module. Administer the questionnaire after students have completed the module.
- Allow students enough uninterrupted time to carefully complete the questionnaire. Do not administer at unusual times.
- The importance you (the teacher) place on the completion of the questionnaire will affect the importance students place on it.
- Administer the questionnaire to all SPARK student participants. Account for those that do not participate.
-

Once all SPARK student participants have completed the questionnaires mail them to:
Kay Brothers
Idaho SPARK
College of Education, Room 506-F
University of Idaho
Moscow, Idaho 83844-3080

- If you have any questions about this questionnaire or how to administer it, contact Kay Brothers at (208) 885-4028 or at brothers@uidaho.edu

BEFORE STUDENTS COMPLETE THE QUESTIONNAIRE

Ask Students to:

- Write their code identification number, teacher name, and module used in the appropriate boxes on the questionnaire.
- Read each question and provide their own reaction to it. Students should use the response key provided on the questionnaire and select only one answer for every question. They should also provide comments in the appropriate spaces.

Remind students that:

- They should respond according to their own personal beliefs.
- Responses are very important as they will be used in improving the modules.
- All responses will be kept confidential (that is why they have a code identification number).
- This questionnaire is not a test. Responses will not affect their grades.
- You (the teacher) will not look at their responses.

AFTER STUDENTS COMPLETE THE QUESTIONNAIRE

Ask Students to:

- Verify that they have appropriately written their code identification number.
- Verify that they have provided a response to every question.
- Place the completed questionnaire in a manila envelope to be mailed to Idaho SPARK. Since you (the teacher) may be interested in knowing how your students responded to these questions we will share their responses with you (the teacher) once we summarize them.

Thank you for participating in the Idaho SPARK project and for carefully administering these questionnaires.

c:\spark\forms\stdntqst

END OF MODULE STUDENT QUESTIONNAIRE

Code Identification Number:_____ Teacher:_____

Module Used:_____

- Read each question and provide your reaction to it. Your responses are very important as they will be used in improving the modules.
- This questionnaire is not a test. Your responses will not affect your grades.

SECTION I. Select the one response that best fits your reaction to questions 1 - 6. Include comments that will help us understand your answers. For example, if you answer "Strongly Agree" to the question "I would like to work on another Idaho SPARK module," include comments explaining why you would like to work on another module.

1. Select which best describes your feelings about using the Idaho SPARK module:

____(A) Easy, and enjoyable ____(B) Easy, but not enjoyable ____(C) Difficult, but enjoyable ____(D) Difficult, and not enjoyable

Comments:_____

2. I have developed a better understanding of the problem solving process as a result of using the Idaho SPARK module.

____(A) Strongly Agree ____(B) Agree ____(C) Disagree ____(D) Strongly Disagree

Comments:_____

3. I have developed a better understanding of aeronautics as a result of using the Idaho SPARK module.

____(A) Strongly Agree ____(B) Agree ____(C) Disagree ____(D) Strongly Disagree

Comments:_____

4. I have developed a better understanding of the Internet as a result of using the Idaho SPARK module.

____(A) Strongly Agree ____(B) Agree ____(C) Disagree ____(D) Strongly Disagree

Comments:_____

5. Select which best describes your feelings about working with classmates on the Idaho SPARK module:

____(A) Easy, and enjoyable ____(B) Easy, but not enjoyable ____(C) Difficult, but enjoyable ____(D) Difficult, and not enjoyable

Comments:_____

6. I was more involved in learning using the Idaho SPARk module than I normally am.

____(A) Strongly Agree ____(B) Agree ____(C) Disagree ____(D) Strongly Disagree

Comments:_____

_____

_____

7. I understand the information and concepts presented in the Idaho SPARK module.

____(A) Strongly Agree ____(B) Agree ____(C) Disagree ____(D) Strongly Disagree

Comments:_____

_____

_____

8. I would like to work on another Idaho SPARK module.

____(A) Strongly Agree ____(B) Agree ____(C) Disagree ____(D) Strongly Disagree

Comments:_____

_____

_____

SECTION II. Answer questions 1-4. Include as many comments as necessary to clarify your point of view.

1. What was most exciting or interesting about working on the Idaho SPARK module? Explain._____

_____

_____

_____

2. What was most frustrating or hard about working on the Idaho SPARK module? Explain.____

_____

_____

_____

3. Were there any parts of the module that were confusing? Explain._____

_____

_____

_____

4. If you were designing a module, what would you do to improve it for students? Explain

_____

_____

_____

- Before you return your questionnaire, verify that you have appropriately written your code identification number and that you have provided a response to every question.
- Thank you for participating in the Idaho SPARK project and for carefully completing this questionnaire.

GUIDELINES FOR COMPLETING THE CLASSROOM OBSERVATION INSTRUMENT

GENERAL GUIDELINES FOR COMPLETING THE OBSERVATION INSTRUMENT

- Complete the CLASSROOM OBSERVATION INSTRUMENT after you observed students working on an Idaho SPARK module. If you will be observing students working on the same module over a period of several days, complete the observation instrument at the end of the observations.
- When you have completed the observation instrument mail it to:

Kay Brothers
Idaho SPARK
College of Education, Room 506-F
University of Idaho
Moscow, Idaho 83844-3080

- If you have any questions about the observation instrument or how to utilize it during your observations, contact Kay Brothers at (208) 885-4028 or at brothers@uidaho.edu

BEFORE OBSERVING

- Familiarize yourself with the observation instrument.

DURING OBSERVATIONS

- Take sufficient notes to assist you in completing the observation instrument.

AFTER OBSERVING

- Complete the observation instrument by scoring observations using the scale provided.
- On the appropriate COMMENT SHEET provide explanations for your rating of each observation. Your comments may include examples of behaviors, quotes from students, etc.
- Carefully answer Questions 1-8 in SECTION IV of the observation instrument by providing as much information as you can.

- Thank you for participating in the Idaho SPARK project and for carefully completing the observation instrument.

c:\spark\forms\obsvinst

CLASSROOM OBSERVATION INSTRUMENT

Teacher:_____ Observer:_____

Module:_____ Date: _____ Class Section:_____

SECTION I. Use the following key to score your observations. Then provide comments for each category on the appropriate COMMENT SHEET.

0 = no evidence
1 = infrequent
2 = approximately equal in occurrence and non-occurrence
3 = frequently

STUDENT BEHAVIORS, STUDENT/STUDENT INTERACTIONS

OBSERVATIONS	GROUP 1 SCORE	GROUP 2 SCORE	GROUP 3 SCORE	GROUP 4 SCORE	GROUP 5 SCORE
1. Identify the problem					
2. Develop questions that must be answered					
3. Develop techniques to obtain answers					
4. Collect data					
5. Analyze date					
6. Draw conclusions					
7. Demonstrate objectivity					
8. Ask questions within the team					
9. Discuss resources and data within the team					
10. Reflect and refine ideas					
11. Reflect and refine problem solving process					
12. Demonstrate commitment, involvement, and motivation					
13. Apply and transfer knowledge					
14. Take problem further (extensions)					
15. Relate problem to real life situations					
16. Equally challenged by thinking as by knowing the right answer					
17. Persistent, goes beyond first draft					
18. Generate superior products					
19. Demonstrate understanding of the subject matter					

SECTION II. Use the following key to score your observations. Then provide comments for each category on the appropriate COMMENT SHEET.

0 = no evidence
1 = infrequent
2 = approximately equal in occurrence and non-occurrence
3 = frequently

TEACHER BEHAVIORS, TEACHER/STUDENT INTERACTIONS

OBSERVATIONS	SCORE
1. Assigns clear tasks	
2. Explains how work will be evaluated	
3. Specifies time frame to complete task	
4. Intervenes only when necessary	
5. Encourages students to go to the group for answers	
6. Helps students locate resources	
7. Adjusts level of information and support according to student needs	
8. Gives hints or cues	
9. Assists students in the use of a strategy	
10. Helps students construct their own meaning	
11. Helps students link new information to prior knowledge	
12. Refocuses student efforts	
13. Helps students refine problem solving strategies	
14. Helps students stay on task	
15. Models behaviors by thinking aloud and demonstrating when needed	
16. Participates as a co-learner and a co-investigator	
17. Allows students time to reflect on the problem solving process	
18. Facilitates student self-evaluation (metacognition)	
19. Is aware of group dynamics problems	
20. Provides closure to the module	
21. Listens	
22. Uses knowledge building strategies (e.g. brainstorming)	

SECTION III. Use the following key to score your observations. Then provide comments for each category on the appropriate COMMENT SHEET.

0 = no evidence
1 = infrequent
2 = approximately equal in occurrence and non-occurrence
3 = frequently

CLASSROOM CONDITIONS, CLASSROOM EVENTS, ASSESSMENT METHODS

OBSERVATIONS	SCORE
1. Heterogeneous grouping	
2. Small groups or teams of at least two	
3. Students learn collaboratively	
4. Group members have a specific role or task	
5. Instructional model is interactive (students are engaged with the resources and learning context)	
6. Instructional model is generative (learners with different perspectives come together to produce a shared understanding)	
7. Tasks are multidisciplinary	
8. Tasks are authentic	
9. Tasks are challenging	
10. Clear expectations	
11. Assessment methods ask students to demonstrate their knowledge and skills in authentic tasks, projects, or investigations	

COMMENT SHEET
CLASSROOM OBSERVATION INSTRUMENT
STUDENT BEHAVIORS, STUDENT/STUDENT INTERACTIONS

Teacher:_____ Observer:_____

Module:_____ Date:_____ Class Section:_____

OBSERVATIONS	COMMENTS
1 Identify the problem	
2 Develop questions	
3 Develop techniques	
4 Collect data	
5 Analyze data	

OBSERVATIONS	COMMENTS
6 Draw conclusions	
7 Demonstrate objectivity	
8 Ask questions within	
9 Discuss resources within	
10 Reflect and refine ideas	

OBSERVATIONS	COMMENTS
11 Reflect/ refine problem	
12 Commitment involvement motivation	
13 Apply and transfer knowledge	
14 Take problem further	
15 Relate problem	
16 Challenge of thinking vs knowing	

OBSERVATION	COMMENTS
17 Persistence	
18 Quality of products	
19 Understanding of subject matter	

COMMENT SHEET
CLASSROOM OBSERVATION INSTRUMENT
TEACHER BEHAVIORS, TEACHER/STUDENT INTERACTIONS

Teacher:_____ Observer:_____

Module:_____ Date:_____ Class Section:_____

OBSERVATIONS	COMMENTS
1 Assigns clear tasks	
2 Explains evaluation	
3 Specifies time frame	
4 Intervenes when needed	
5 Encourages student to go to group for answers	

OBSERVATION	COMMENTS
6 Helps locate resources	
7 Adjusts to meet student needs	
8 Gives hints	
9 Assists in strategy	
10 Helps construct meaning	
11 Link new information to prior	

OBSERVATION	COMMENTS
12 Refocuses students efforts	
13 Helps refine problem solving strategy	
14 Helps stay on task	
15 Models thinking aloud	
16 Co-learner	
17 Allows reflection	

OBSERVATION	COMMENTS
18 Allows self evaluation	
19 Sensitive to group dynamics	
20 Provides closure	
21 Listens	
22 Brainstorming	

COMMENT SHEET
CLASSROOM OBSERVATION INSTRUMENT
CLASSROOM CONDITIONS, CLASSROOM EVENTS, ASSESSMENT METHODS

Teacher:_____ Observer:_____

Module:_____ Date:_____ Class Section:_____

OBSERVATION	COMMENTS
1 Heterogeneous groupings	
2 Small groups	
3 Collaboration	
4 Memory roles/tasks	
5 Interactive	

OBSERVATION	COMMENTS
6 Generative	
7 Multidisciplinary	
8 Authentic	
9 Challenging	
10 Clear expectations	
11 Assessment authentic	

SECTION IV. Answer the following questions:

1. List positive comments or aspects of the class that worked. _____

_____

_____

2. List negative comments or aspects of the class that did not work. _____

_____

_____

3. What was the most productive section of the module? _____

_____

_____

4. What was the least productive section of the module? _____

_____

_____

5. Discuss favorable aspects of the Idaho SPARK learning environment. _____

_____

_____

6. Discuss negative aspects of the Idaho SPARK learning environment. _____

_____

_____

7. List tips for teachers using the modules. _____

_____

_____

8. List suggestions for alterations or elaboration to the modules. _____

_____

_____

Appendix G

Departmental Finance Detail Report
Granting Period
June 15, 1995 through June 15, 1996

NCC 2-914

Departmental Finance Detail Report
Fiscal Year 1996

Granting Period 6-15-95 to 6-30-96 **IDAHO SPARK** **EG-K026**

#	A	C	Number	Vendor	Description	S	Budget	Expenditures	Encumbrances	Balance
		01 Salary								
		Balance Forward					$14,717.00	$2,452.80	$0.00	$14,717.00
		8/11/95		Kay Brothers	salary			$1,226.40		
		8/25/95		Kay Brothers	salary			$1,226.40		
		9/8/95		Kay Brothers	salary			$1,226.40		
		9/22/95		Kay Brothers	salary			$1,226.40		
		10/6/95		Kay Brothers	salary			$1,226.40		
		10/20/95		Kay Brothers	salary			$1,226.40		
		11/3/95		Kay Brothers	salary			$1,226.40		
		11/17/95		Kay Brothers	salary			$1,226.40		
		12/1/95		Kay Brothers	salary			$1,226.40		
		12/15/95		Kay Brothers	salary			$1,226.40		
		12/29/95		Kay Brothers	salary			$1,226.40		
		1/9/96	Supplement		to 5-14-96		$17,292.00			
		1/12/96		Kay Brothers	salary			$1,226.40		
		1/26/96		Kay Brothers	salary			$1,226.40		
		2/9/96		Kay Brothers	salary			$1,226.40		
		2/23/96		Kay Brothers	salary			$1,226.40		
		3/8/96		Kay Brothers	salary			$1,349.04		
		3/22/96		Kay Brothers	salary			$1,226.40		
		4/5/96		Kay Brothers	salary			$1,226.40		
		4/19/96		Kay Brothers	salary			$1,226.40		
		5/3/96		Kay Brothers	salary			$1,226.40		
		5/17/96		Kay Brothers	salary			$1,226.40		
		5/31/96		Kay Brothers	salary			$1,226.40		
		6/14/96		Kay Brothers	salary			$1,226.40		
		**********								
		Ending Balance					$32,009.00	$30,782.64	$0.00	$1,226.36
		02 Fringe								
		Balance Forward					$4,483.00	$577.22	$0.00	$4,483.00
		8/11/95		Fringe benefits				$350.32		
		8/25/95		Fringe benefits				$350.32		
		8/17/95		Workers comp				$92.22		
		9/8/95		Fringe benefits				$409.54		
		9/14/95		workers comp				$92.22		
		9/22/95		Fringe benefits				$370.77		
		10/6/95		Fringe benefits				$350.32		
		10/6/95		Workers comp				$94.68		
		10/20/95		Fringe benefits				$370.77		
		11/1/95		Unemployment insurance				$32.17		
		11/3/95		Fringe benefits				$379.30		
		11/17/95		Fringe benefits				$382.48		
		11/9/95		workers comp				$92.85		
		12/1/95		Fringe benefits				$386.11		
		12/5/95		Workers comp				$94.22		

Departmental Finance Detail Report
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Granting Period 6-15-95 to 6-30-96 **IDAHO SPARK** **EG-K026**

P	X	Date	Number	Vendor	Description	*	Budget	Expend.	Encumbrance	Balance
		12/15/95		Fringe benefits				$361.94		
		12/29/95		Fringe benefits				$407.08		
		1/9/96	supplement	to 5-14-96			$5,165.00			
		1/12/96		Fringe benefits				$449.48		
		1/26/96		Fringe benefits				$475.30		
		2/9/96		Fringe benefits				$486.03		
				Industrial Accident						
		2/13/96		Insurance				$141.54		
		2/16/96		Unemployment insurance				$40.85		
		2/23/96		Fringe benefits				$448.73		
		3/8/96		Fringe benefits				$484.31		
		3/22/96		Fringe benefits				$441.52		
		4/5/96		Fringe benefits				$454.25		
		4/19/96		Fringe benefits				$429.38		
		5/3/96		Fringe benefits				$451.41		
		5/17/96		Fringe benefits				$444.91		
		5/31/96		Fringe benefits				$485.98		
		6/14/96		Fringe benefits	need to check with run			$429.38		
		Ending Balance					$9,648.00	$10,857.60	$0.00	($1,209.60)
		03 Irregular Help								
		Balance Forward					$3,346.00	$0.00	$0.00	$3,346.00
		9/8/95		Pat Boyd	ih			$508.33		
		9/22/95		Pat Boyd	ih			$175.56		
		10/20/95		Pat Boyd	ih			$175.56		
		11/3/95		Pat Boyd	ih			$281.69		
		11/17/95		Pat Boyd	ih			$276.11		
		12/1/95		Pat Boyd	ih			$307.23		
		12/15/95		Pat Boyd	ih			$99.75		
		12/29/95		Pat Boyd	ih			$487.20		
		1/9/96	supplement		to 5-14-96		$3,224.00			
		1/12/96		Pat Boyd	ih			$200.46		
		1/26/96		Pat Boyd	ih			$406.00		
		2/9/96		Pat Boyd	ih			$492.28		
		2/23/96		Pat Boyd	ih			$195.39		
		3/8/96		Pat Boyd	ih			$238.53		
		3/22/96		Pat Boyd	ih			$137.02		
		4/5/96		Pat Boyd	ih			$238.53		
		419-96		Pat Boyd	ih			$40.60		
		5/3/96		Pat Boyd	ih			$215.69		
		5/17/96		Pat Boyd	ih			$164.13		
		5/31/96		Pat Boyd	ih			$289.28		
		6/14/96		Pat Boyd	ih			$304.50		
		**********								
		Ending Balance					$6,570.00	$5,233.84	$0.00	$1,336.16

Departmental Finance Detail Report
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Granting Period 6-15-95 to 6-30-96 **IDAHO SPARK** **EG-K026**

P	X	Date	Number	Vendor	Description	*	Budget	Expense	Encumbrance	Balance
		04 Travel								
		Balance Forward					$92.00	$0.00	$0.00	$92.00
		1/9/94	supplement		to 5-14-96		$88.00			
		2/5/96	idv12307	UI Motor Pool	travel to Lapwai			$22.31		
		2/13/96	tr305551	Kay Brothers	NASA Workshop, Greenbelt, MD,3-15-96			$468.75		
		2/13/96	tr305552	Isabel Bond	NASA Workshop, Greenbelt, MD,3-15-96			$468.75		
		3/18/96	dp146468	Departures	Ken Beidler, Tim Turner-Edward's AFB			$398.20		
		3/18/96	dp146469	Departures	Kay Brothers-Edward's AFB			$212.60		
		3/26/96	dp146470	Departures	Yolanda Bisbee-Edward's AFB			$445.20		
		4/8/96	tr305556	Kay Brothers	NASA Workshop, Greenbelt-per diem,rm			$812.35		
		4/8/96	tr305557	Isabel Bond	NASA Workshop, Greenbelt-per diem			$242.05		
		4/30/06	tr305558	Kay Brothers	Edward's AFB expenses			$635.98		
		4/30/96	tr305560	Yolanda Bisbee	Edward's AFB expenses			$87.00		
		**********								
		Ending Balance					$180.00	$3,793.19	$0.00	($3,613.19)
		05 Operating Expense								
		Balance Forward					$1,128.00	$0.00	$0.00	$1,128.00
		8/7/95	IDS 17646	Central Stores	Office Supplies			$55.98		
		8/7/95	CV711726	ISTE	Way of the Ferret			$30.95		
		8/7/95	CV722032	Far West Laboratory	Videotape & assessment guides			$22.00		
		8/8/95	DP139877	Ken's Stationery	Binders & office supplies			$53.32		
		8/9/95	ID-D 3929	UI Printing & Design	SPARK Letterhead & envelopes			$120.50		
		8/21/95	IDCAcm9	Campus mailI	July postage			$0.64		
		8/28/95	ID-G 119176	UI Bookstore	Labels, yellow pads			$14.52		
		8/10/95	PC8795	ISTE	Evaluator's Guide for Microcomputer			$6.95		
		8--9-95	CV722033	Delta Education	Integrating Aerospace Science			$26.50		
		9/28/95	IDCA928	Campus mail	August postage			$2.25		
		10/19/95	CV722042	Cactus Computer/Kay	Computer switch box			$38.75		
		10/11/95	IDG19177	UI Bookstore	fasteners,disks,pencils			$21.94		
		10/11/95	IDG-19178	UI Bookstore	transparancies			$25.50		
		10/18/95	IDG-19179	UI Bookstore	folders for schools			$7.87		
		10/23/95	IDG-19180	UI Bookstore	microsoft word, excel			$96.00		
		10/23/95	IDG-19181	UI Bookstore	cable,powerpoint,disk set			$49.00		
		10/24/95	PC1025	Cactus Computer-Kay	cable			$7.35		
		10/25/95	IDS21292	Central Stores	tape dispenser			$5.58		
		11/8/95	IDD 3940	Printing & Design	Business cards - Kay Brothers			$92.50		
		11/14/95	idca	Campus mail	September			$4.09		
		11/20/95	CV711744	Wal-Mart/Kay	telephone, computer speakers			$94.43		
		11/21/95	95-0483	Telehone Systems	telephone installataion charge			$20.00		
		12/6/95	IDW01576	Building Services	SPARK door sign			$7.98		
		12/14/95	PC121495	UI Bookstore	folders for Potlatch school visit			$5.51		
		12/15/95	IDG 19191	UI Bookstore	MS Office Pro for Windows			$163.00		
		12/18/95	CV711749	Precision Engraving Co.	plaques for Lakeside,Potlatch,Lapwai			$105.45		
		1/2/96	tc010296	local telephone-Nov, 95				$35.50		
		1/2/96	tc010296	long distance telephone-Nov 95				$8.67		
		1/8/96	IDG-19185	UI Bookstore	plan-a-month wall calendar			$22.05		

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Granting Period 6-15-95 to 6-30-96 **IDAHO SPARK** **EG-K026**

A	X	Date	Number	Vendor	Description	S	Budget	Expended	Encumbered	Balance
		1/9/96	supplement		to 5-14-96		$6,031.00			
		1/11/96	cm960111	Campus mail - Nov.				$0.40		
		1/17/96	tc951201	local telephone	Dec-95			$16.50		
		1/17/96	tc951201	long distance telephone	December, 1995			$34.56		
		1/24/96	CV726627	National Academy Press	Nat'l Science Ed. Standards			$17.88		
		1/30/96	CV 726628	NW Regional Ed Lab	External review of SPARK			$400.00		
		2/5/96	dpo156074	Compu-Dyne	2-Ascend Etherframe pipelines			$2,275.00		
		2/5/96	idg96008	Ed Copier	Dec, 95 - Jan ,96			$37.26		
		2/12/96	cm960212	Campus Mail	Dec. 95			$1.53		
		2/29/96	cm960229	Campus Mail	Jan. 96			$12.21		
		2/29/96	idg96003	Ed Copier	Oct-Nov. 95			$11.88		
		3/4/96	idg 14460	Photo Services	pictures for Washington DC			$104.20		
		3/5/96	tc960101	Local telephone	Jan. - 96			$16.50		
		3/5/96	tc960101	Long distance telephone	Jan. -96			$33.36		
		3/11/96	cv726629	Sausage Software	HotDog Professional software			$79.95		
		3/14/96	314copy	Ed copier service	February, 1996 charges			$11.61		
		3/19/96	ids27788	Central Stores	forms			$1.98		
		3/22/96	cm960322	Campus Mail	Feb. -96			$17.40		
		3/24/96	1017200.5	Federal Express				$7.75		
		3/25/96	1017222.5	Federal Express				$9.50		
		3/26/96	idg19186	UI Bookstore	Clarisworks 4.0			$44.35		
		3/26/96	idg19188	Dept. of Purchasing	DPO forms			$8.00		
		3/31/96		long distance telephone	February, 1996			$41.76		
		3/31/96		local telephone	February, 1996			$16.50		
		4/8/96	tr305556	Kay Brothers-SPARK Pl tri	reg-160. shipping-34,phone-3.45			$197.45		
		4/15/96	cm960415	Campus Mail	Mar-96			$5.54		
		4/12/96	tc96301	Local telephone	March, 1996			$17.60		
		4/12/96	tc041296	Long distance telephone	March, 1996			$39.63		
		4/11/96	idg96015	Ed Copier	March, 1996			$14.94		
		4/17/96	idg19189	UI Bookstore	Look to Mountain,supplies			$31.13		
		4/30/96	cv726638	Ken Beidler	Edward's AFB reimb.			$147.82		
		4/30/96	cv726637	Tim Turner	Edward's AFB reimb.			$120.00		
		4/30/96	57copier	Ed Copier service	April, 1996			$37.22		
		5/10/96	mo50	UI Shop	cord cover			$4.56		
		5/10/96		McDonald & Assoc.	Memory for 5 systems-(no freight included)			$540.00		
		4/30/96	tr305558	Kay Brothers	Edward's AFB -car rental			$127.81		
		5/8/96	tc011796	Telephone -long distance	credit for conference call			($16.68)		
		5/10/96	cm960510	Campus Mail	April, 1996			$18.61		
		5/15/96	idgj0091411	Ed fax charges				$57.80		
		5/20/96		Long distance telephone	April, 1996			$49.20		
		5/20/96		Local telephone	April, 1996			$16.50		
		5/21/96	ids30181	Central Stores	office supplies			$70.10		
		5/21/96	ids30180	Central Stores	office supplies			$82.48		
		5/23/96	ids30225	Central Stores	credit for forms			($1.98)		
		5/29/96	cv726647	GTE	Connectivity -Plummer Worley			$342.00		
		5/30/96	dp159709	Lego Dacta	building sets, interface, transformer			$503.20		
		6/4/96	dp159711	Ken's Stationery	binders, labels, badges			$170.05		

Departmental Finance Detail Report
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Granting Period 6-15-95 to 6-30-96 **IDAHO SPARK** **EG-K026**

#	X	Date	Number	Vendor	Description	Budget	Expended	Encumbered	Balance
		6/6/96	ids30674	Central Stores	memos		$2.00		
		6/7/96	dp159712	Hodgins Drug	airplane models and supplies		$217.89		
		6/10/96	dp159713	Hodgins Drug	airplane supplies		$7.97		
		6/12/96	dp159716	Main Street Deli	snacks for workshop		$22.84		
		6/12/96	idg19190	UI Bookstore	disks, film for workshop		$62.06		
		.....							
		Ending Balance				$7,159.00	$7,232.60	$0.00	($73.60)
		06 Capital Outlay							
		Balance Forward				$13,095.00	$0.00	$0.00	$13,095.00
		10/11/95		UI Bookstore/Dell Computer	5 computers & equimpent		$9,655.00		
		9/28/95	2159	UI Bookstore-Dell	Lap top s/n 4Q7PT		$3,348.50		
		.....							
		Ending Balance				$13,095.00	$13,003.50	$0.00	$91.50
		08 Reserve							
		Balance Forward				$0.00	$0.00	$0.00	$0.00
		.....							
		Ending Balance				$0.00	$0.00	$0.00	$0.00
		08 Overhead							
		Balance Forward				$9,245.00	$1,178.67	$0.00	$9,245.00
		8/25/95		August overhead	9-5-95 FDR		$1,316.61		
		9/30/95		September overhead	10-4-95 FDR		$1,629.71		
		10/31/95		October overhead	11-5-95 FDR		$1,419.87		
		11/30/95		November overhead	12-6-95 fdr		$1,571.60		
		12/30/95		December overhead	1-10-96 fdr		$2,419.24		
		1/9/96	supplement		to 5-14-96	$12,370.00			
		2/3/96		January overhead	2-3-96 fdr		$1,595.57		
		2/29/96		February overhead	3-10-96 fdr		$2,216.61		
		3/31/96		March overhead	4-8-96 fdr		$2,051.34		
		4/30/96		April overhead	5-2-96 fdr		$1,956.14		
		5/30/96		May overhead	6-5-96 fdr		$3,668.77		
		.....							
		Ending Balance				$21,615.00	$21,024.13	$0.00	$590.87
		10 Trustee Benefits							
		Balance Forward				$0.00	$0.00	$0.00	$0.00
		6/12/96	cv726641	UI Bursar	workshop credits		$1,670.40		
		.....							
		Ending Balance				$0.00	$1,670.40	$0.00	($1,670.40)

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Fiscal Year 1996

Granting Period 6-15-95 to 6-30-96 **IDAHO SPARK** **EG-K026**

J	K	Date	Number	Vendor	Description	Budget	Expended	Encumbered	Balance

Budget Recap

	Budget	Expended	Encumbered	Balance
Salary	$32,009.00	$30,782.64	$0.00	$1,226.36
Fringe	$9,648.00	$10,857.60	$0.00	($1,209.60)
Irregular Help	$6,670.00	$5,233.84	$0.00	$1,336.16
Travel	$180.00	$3,793.19	$0.00	($3,613.19)
Operating Expense	$7,159.00	$7,232.60	$0.00	($73.60)
Capital Outlay	$13,095.00	$13,003.50	$0.00	$91.50
Reserve	$0.00	$0.00	$0.00	$0.00
Overhead	$21,615.00	$21,024.13	$0.00	$590.87
Trustee Benefits	$0.00	$1,670.40	$0.00	($1,670.40)
Total	$90,276.00	$93,597.90	$0.00	($3,321.90)

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